



# Environmental Technology Verification Program

## QUARTERLY REPORT

October 1998

### ETV Program Doubles Number of Technology Verifications



In the last quarter of fiscal year 1998, the ETV Program completed 13 additional technology verifications, resulting in a total of 25 verified technologies under three pilots (see 25 Technologies Verified on page 3). All 13 verifications were completed at the end of September. One fuel cell technology was verified under the relatively new Greenhouse Gas Technology Pilot. It is expected that additional fuel cell technologies will be verified under this pilot in the near future. Twelve of the new verifications were conducted under the Site Characterization and Monitoring Technologies Pilot, including six soil/soil gas monitors and six PCB analysis technologies from 10 different vendors. A seventh PCB analysis technology underwent field testing in late September. In addition, the verifications of five wellhead monitoring technologies under this pilot are expected to be completed by the end of October, and testing was completed in mid-September for five decision support software technologies. Additional completed verifications are expected soon from the Drinking Water Systems Pilot and the Pollution Prevention, Recycling and Waste Treatment Technologies Pilot. The ETV Program expects the number of technology verifications to continue to grow rapidly.

### New Pilots Making Progress

The Wet Weather Flow Technologies (WWF) Pilot, which began on May 28, 1998, held a kick-off meeting on July 14-15. Two types of wet weather flow systems were identified for possible verification: storm-inlet devices (e.g., inserts to catchbasins or to storm inlets) and advanced high-rate treatment technologies (e.g., sedimentation, micro- and fine-mesh screening, biological processes, disinfection). In August, EPA and NSF International, the verification organization (VO), began identifying stakeholders and formulating a stakeholder group. The stakeholder group will prioritize specific technologies at the first meeting on November 12 in Baltimore, MD. The contacts for this pilot are Mary Stinson (732-321-6683), EPA pilot manager, and Tom Stevens (734-769-5347), NSF pilot manager.

The WWF Pilot is off to a great start with outreach activities. Pilot information was presented at the June 28-July 1 Water Environment Federation Urban Wet Weather '98 Conference in Cleveland, OH. On the same dates, information on the pilot was included in a presentation to the National Environmental Health Association's (NEHA) national conference in Las Vegas, NV. The pilot also was displayed at the exposition of the Water Environment Federation 71st Annual Conference, WEFTEC '98, in Orlando, FL.

The Source Water Protection Technologies (SWP) Pilot, which began on May 22, 1998, held a kick-off meeting on July 14-15. The first technology category identified for the SWP Pilot is decentralized treatment facilities, such as septic systems and group home systems. Two additional technology areas are currently being identified. Technologies under consideration are agricultural runoff treatment facilities, landfill leak detection systems, and underground storage tank leak systems. In August, EPA and NSF International, the VO, began identifying stakeholders and formulating a stakeholder group. The stakeholder group will prioritize specific technologies at the first meeting, which is scheduled for December 1998. The contacts for this pilot are Anthony Tafuri (732-321-6604), EPA pilot manager, and Tom Stevens (734-769-5347), NSF pilot manager. (continued on page 2)

ETV

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# Pilot Points

## Advanced Monitoring Systems

- Held a Water Stakeholder Advisory Committee meeting on September 10 and 11.
- Held an Air Stakeholder Advisory Committee meeting on September 16 and 17.
- Selected air and water technologies to be verified.
- Held the first vendor meeting with air monitoring technology vendors on August 24.

## Air Pollution Control Technologies

- Held a Stakeholder Advisory Committee meeting on September 18 in Research Triangle Park, NC.
- Selected Wet Electrostatic Precipitators (Wet ESP) and Hazardous Air Pollutants as two additional technology categories.
- The next stakeholder meeting is scheduled for January 28, 1999.

## Drinking Water Systems

- Expecting to issue verification report/statement for Calgon Carbon Corp.'s Sentinel™ ultraviolet plant in October.
- Accepted Zenon Environmental System's and Aquasource's membrane filtration technologies.
- Published two articles in July and August issues of the *National Drinking Water Clearinghouse "On Tap" and the Water Conditioning and Purification Journal*.

## Greenhouse Gas Technology

- Selected stakeholders for the microelectronics industry Stakeholder Advisory Committee.

## Indoor Air Products

- Scheduled "pilot" testing of office chairs (within the Commercial Furniture Sector) and filters (within the Ventilation Air Filters Sector) for Fall 1998. This testing is meant only as a method for validation of the protocol and the verification process.
- Identified electronic air filters as a third technology focus area.

## P2 Innovative Coatings and Coating Equipment

- Performed baseline testing on Conventional Air Spray (CAS) coating application equipment in preparation for testing on High-volume, Low-pressure (HVLP) spray equipment.
- Expect to begin testing of four HVLP spray guns in early FY99. CTC is completing Testing and Quality Assurance Project Plans (TQAPPs).

- Two vendors committed to testing, ITW DeVilbiss of Maumee, OH, and Sharpe Manufacturing of Sante Fe Springs, CA. ITW DeVilbiss is providing three HVLP guns (1 for use in aerospace and 2 for use in the automotive industry), and Sharpe is providing one gun for use in the automotive industry.
- Received 32 applications in response to an Innovative Coatings and Coating Equipment technology focus area solicitation.
- The TQAPP for CAS Equipment was officially approved by EPA on July 20, 1998, and was used to develop baseline numbers for the eventual testing of HVLP Spray Equipment.

## P2, Recycling & Waste Treatment Technologies

- Continued testing SMarTsonic's SMT Screen Stencil Cleaning Process with inspections at technology user sites.
- Drafting verification report/statement for Rayovac Renewal® Rechargeable Battery based on Cal/EPA certification testing.
- Identifying stakeholders for the pilot and planning a meeting for November.

## Site Characterization & Monitoring Technologies

- Held a stakeholder meeting on September 9 in Washington, DC.
- Tested five Decision Support Software (DSS) technologies during the week of September 14-25.
- Approved and signed verification reports and statements for six Soil/Soil Gas technologies.
- Approved and signed verification reports and statements for six PCB technologies.
- Verified the performance of EnviroLogix Inc.'s PCB in Soil Tube Assay at Oak Ridge National Laboratory (ORNL) in Oak Ridge, TN, September 21-25, the 7th PCB field analytical technology to be evaluated under the ETV Program.
- Scheduled a meeting to review/improve the verification report preparation process for October 25 in Albuquerque, NM.

## Environmental Technology Evaluation Center (EvTEC)

- The Naval Facilities Engineering Command (NAVFAC) signed on with EvTEC to verify technologies focused around UST monitoring and alternative landfill covers.
- EvTEC will be evaluating an UST Leak Detection Technology for Vista Research, Inc., a Mountain View, CA-based provider of environmental and defense R&D services specializing in storage tank and pipeline leak detection systems.

(continued from page 1)

Word is starting to spread about the SWP Pilot. Information was presented at the NEHA annual conference in June, and the pilot was featured in the June-July 1998 edition of the National Onsite Wastewater Recycling Association (NOWRA) bimonthly newsletter. Information on the pilot also was presented at the meeting of the Source Water Protection Committee of the Association of State Drinking Water Administrators on October 7 and at the NOWRA meeting on October 22.

Progress in the P2 Metal Finishing Technologies Pilot has been significant since getting underway in FY98. Earlier in the year, Concurrent Technologies Corporation (CTC) was selected as the VO for this pilot. A pilot kick-off meeting was held on July 23, at

which point the first stakeholder meeting was scheduled for November 19, 1998 in Chicago, IL. The outcome of the stakeholder meeting will be a prioritized list of technology focus areas for further pilot activities. Additionally, a press release (posted on the ETV Web site) was issued on July 9, 1998 announcing the establishment of the ETV Center for Metal Finishing at CTC, and a pilot fact sheet was posted on the ETV Web site in August. A preliminary list of technologies targeted for verification includes emissions and risk characterization from plating operations; methods to determine cyanide concentrations in wastewater and solids; in-process and/or off-site recovery of metals, acids, and cleaners; reduction of the use of chlorinated solvents for cleaning; and reduction of cadmium emissions.

## Web Watch

- ✓ A draft version of the Large Chamber Test Protocol for Emissions of VOCs and Aldehydes was completed under the Indoor Air Products Pilot and posted on the ETV Web site on August 17, 1998. Access it at [http://www.epa.gov/etv/05/05\\_prot.htm](http://www.epa.gov/etv/05/05_prot.htm).
- ✓ The ETV Program Quality Management Plan for the Pilot Period (1996-2000) is available on the ETV Web site at <http://www.epa.gov/etv/library.htm>.
- ✓ The P2 Metal Finishing Pilot fact sheet is posted on the ETV Web site at [http://www.epa.gov/etv/10/10\\_main.htm](http://www.epa.gov/etv/10/10_main.htm).
- ✓ Check out the ETV Web site at <http://www.epa.gov/etv> for additional information on our three newest partners!

## ETV's Quality Management Plan Completed

The ETV Quality and Management Plan (QMP) is the second major program document being used by ETV to guide its operation, following the *ETV Program Verification Strategy* (February 1997). The ETV QMP uses the structure, policies, and standards of the ANSI/ASQC E4-1994 *Specification and Guidelines for Quality Systems for Environmental Data Collection and Environmental Programs*. The E-4 "describes a basic set of mandatory specifications and non-mandatory guidelines by which a quality system for programs involving environmental data collection and environmental technology can be planned, implemented, and assessed."

Based upon the structure and standards of E4, the ETV QMP lays out the definitions, procedures, processes, inter-organizational relationships, and outputs that will assure the quality of both the data and the programmatic elements of ETV during the pilot period (1995-2000). Part A of the ETV QMP contains specifications and guidelines that are applicable to routine quality management functions and activities necessary to support the ETV Program. Part B contains specifications and guidelines that apply to test-specific environmental activities involving the generation, collection, analysis, evaluation, and reporting of test data.

EPA's verification program is organizationally complex, involving numerous outside organizations through its extensive stakeholder process, partner organizations (who bear most of the quality assurance responsibilities), and testing and consulting companies hired by partner organizations to conduct field and laboratory work. The ETV QMP is designed to aid in clearly delineating the roles and responsibilities of all of these diverse and important players. All partner organizations will use this document and its parent, the E4 standard, to create pilot-specific quality management plans that assure appropriate levels of data collection, quality outputs, and customer responsiveness.

The ETV QMP will be reviewed on an annual basis throughout the pilot period to incorporate lessons learned from the experiences of the pilots and feedback from customer groups. It may be obtained via the ETV Web site at <http://www.epa.gov/etv/library.htm>, or by calling 202-564-3236.

## International Cooperation

**CERF and EPA Meet with APEC Members to Begin Collaboration on Environmental Technology Verification Program**



The Civil Engineering Research Foundation (CERF), in cooperation with the Asia Pacific Economic Cooperation (APEC) and funding through an EPA grant, conducted a workshop on September 2-4 in Seattle to initiate long-term collaboration among APEC members in verifying the performance of environmental technology and sharing the results.

Workshop participants represented a cross-section of APEC members and included representatives from Australia, Canada, Taipei, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, and

the U.S. Will Kirksey (CERF) led the meeting, and Penny Hansen represented EPA.

Discussion centered upon the development of verification strategies to satisfy two goals: the creation of high quality data, and the production of broadly useful and transferable information. Methods for identifying technology needs and characteristics as well as desired technological solutions were discussed.

All APEC members that were present agreed that a verification program is needed in their economies, and enthusiastically embraced continuing to build the foundation for an international verification program. At the conclusion of the workshop, each APEC member was asked to develop a draft list of focus areas in which the member country is particularly active (e.g., wastewater). This list will be reviewed in the upcoming weeks, and one APEC point-of-contact (POC) will be established for each focus area (the number and nature of the focus areas is, as yet, undefined). The APEC POC will be tasked with coordinating with all member economies to identify existing verification protocols in the focus area. The POCs will report their findings at the APEC Ministerial meeting in Mexico City in October. Recommendations for next steps, including beginning the process of a dialogue, will be discussed at that time.

## 25 Technologies Verified

### Cone Penetrometers

- ✓ Fugro Geosciences, Inc.; Houston, TX
- ✓ U.S. Navy, Naval Command, Control, and Ocean Surveillance Center, Research, Development, Test and Evaluation Division; San Diego, CA

### Field Portable GC/MSs

- ✓ Brucker Analytical; Billerica, MD
- ✓ Viking Instruments; Chantilly, VA

### Field Portable X-ray Fluorescence Analyzers

- ✓ Metorex, Inc.; Princeton, NJ (2 technologies)
- ✓ Scitec, Inc.; Kennewick, WA
- ✓ HNU Systems, Inc.; Newton Highlands, MA
- ✓ Niton Corporation; Bedford, MA
- ✓ TN Spectrace; Round Rock, TX (2 technologies)

### Emulsified Fuel

- ✓ A-55 Clean Fuels, Inc.; Reno, NV

### Soil/Soil Gas Sampling

- ✓ W.L. Gore & Associates, Inc.; Elkton, MD
- ✓ Art's Manufacturing and Supply; American Falls, ID
- ✓ Geoprobe Systems, Inc.; Salina, KS
- ✓ SimulProbe; Novato, CA
- ✓ Quadrel Services, Inc.; Clarksburg, MD
- ✓ Clements & Associates, Inc.; Newton, IA

### PCB Analysis

- ✓ Dexsil Corporation; Hamden, CT
- ✓ Hach Company; Loveland, CO
- ✓ Electronic Sensor Technology; Newbury Park, CA
- ✓ Strategic Diagnostics, Inc.; Newark, DE (3 technologies)

### Fuel Cell

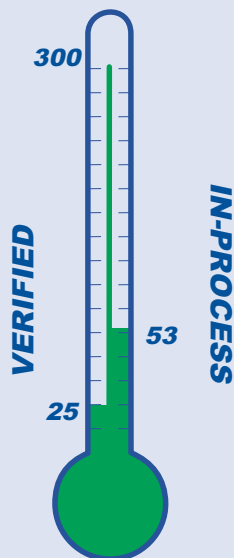
- ✓ International Fuel Cells, Inc.; South Windsor, CT

# ETV Upcoming Events

<u>Date</u>	<u>Location</u>	<u>Event</u>
Oct '98	RTP, NC	Greenhouse Gas Technology Pilot - Sponsored Microelectronics PFC Meeting
Oct 4-7	Orlando, FL	Wet Weather Flow Technologies Pilot Display at the Exposition of the Water Environment Federation 71st Annual Conference (WEFTEC '98)
Oct 7	Keystone, CO	Presentation at the Association of State Drinking Water Administrators' Source Water Protection Committee
Oct 13-16	Crystal City, VA	Second International Specialty Conference on Climate Change
Oct 22	Ft. Mitchell, KY	Source Water Protection Technologies Pilot Presentation at the Annual Meeting of the National Onsite Wastewater Recycling Association (NOWRA)
Oct 25-27	Mobile, AL	Drinking Water Systems Pilot - Exhibit at the National Rural Water Association Annual Meeting
Oct 27	Grand Rapids, MI	Indoor Air Products Pilot - Commercial Furniture Stakeholder Meeting
Oct 27-29	Albuquerque, NM	ETV Team Training Meeting
Nov 2-13	Buenos Aires, Argentina	The Fourth Conference of the Parties to the UNFCCC
Nov 4	RTP, NC	P2 Innovative Coatings and Coating Equipment Pilot - Vendors Meeting
Nov 5	RTP, NC	P2 Innovative Coatings and Coating Equipment Pilot - Stakeholders Meeting
Nov 12	Baltimore, MD	First Wet Weather Flow Technologies Pilot Stakeholder Meeting
Nov 19	Chicago, IL	First P2 Metal Finishing Technologies Pilot Stakeholder Meeting
Dec 9-12	Lake Buena Vista, FL	TechnoVentions '98
Dec 13-16	Las Vegas, NV	National Groundwater Meeting

For more details on ETV Upcoming Events, check out our online calendar at <http://www.epa.gov/etv/highup.htm>

## GOAL: 300 Technologies Verified by 2005



## The ETV Team Training Meeting

**will be held  
October 27-29, 1998  
in Albuquerque, NM**

**Would you like to be on our mailing list?  
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